



## Epidemiologic Notes & Reports

Volume 31 Number 3

March 1996

### Data from K.H.I.E.S.

The Kentucky Health Interview and Examination Survey was published in July 1995. This first statewide, comprehensive health study of Kentuckians contains a wealth of information about the people of Kentucky: their health status, their health risks, and their utilization of health services.

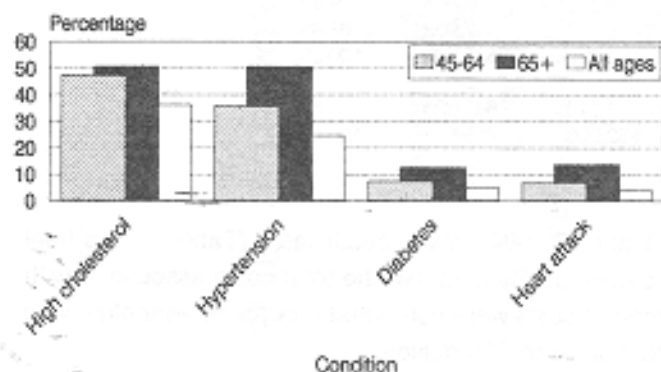
By assessing the health of Kentucky's population at one point in time, the survey will

- provide baseline data against which the effectiveness of the health care system reorganization may be measured;
- furnish information for planning and budgeting based on needs;
- establish a comprehensive data set which can be used to conduct specialized studies of interactions among variables which answer questions for which information has been previously unavailable.

In each of the next several issues of this publication, a pertinent finding from the survey will be presented. The reported prevalence of chronic diseases is featured this month.

Telephone respondents ages 12 and over were asked if they had ever been told by a doctor that they had any of a number of conditions. The most common were:

**Clinical Screening Data**  
Prevalence of medical conditions in selected age groups



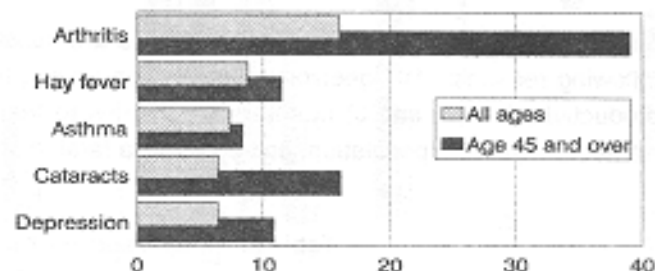
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Arthritis was most prevalent in all ages 12 and over.

People who also went to a clinic for a physical examination were asked the same question for different medical conditions. Results from four selected conditions for those ages 45 and over were:

**Telephone Interview Data**  
Prevalence of most common conditions



At least 50% of the elderly reported an elevated cholesterol. Also 50% or more stated having hypertension.

Parents of children under 12 were questioned about the health status of their children. Asthma was noted in 8.6% of children and chronic bronchitis in 8.0%.

## TEENAGE MOTOR VEHICLE CRASHES IN KENTUCKY: MORBIDITY AND MORTALITY RATES AND ECONOMIC COSTS

In 1994, 142 people were killed on Kentucky highways as a result of injuries sustained from motor vehicle crashes (MVCs) involving a teenage (16-19 year old) driver. In all, young drivers accounted for 17% of Kentucky's fatal crashes, yet represented only 5.6% of the state's licensed drivers (1,2). Kentucky teenagers were killed in MVCs at a rate nearly twice that of adults (41 vs 25 per 100,000, respectively), representing one of the highest teenage death rates in the country (3). In addition, teenagers had 3 times greater risk of death or severe injury from MVCs than did older drivers (4). The risk was greatest for 16 year-olds and decreased with each year of driving experience. Table 1 shows the estimated risk ratios of 16, 17, 18, and 19 year old drivers who were killed or sustained incapacitating injuries when compared to licensed drivers who were 20 or more years of age. Odds ratios (ORs) were significant at each age, as was the adjusted OR (2.92).

**Table 1. Odds Ratios for Motor Vehicle Injuries to Teenage & Older Drivers**

	K + A	NO	Total	
16	71	21,586	21,657	
20+	2,022	2,391,596	2,393,618	
Total	2,093	2,413,182	2,415,275	OR = 3.89
17	89	34,906	34,995	
20+	2,022	2,391,596	2,393,618	
Total	2,111	2,426,502	2,428,613	OR = 3.02
18	103	42,256	42,359	
20+	2,022	2,391,596	2,393,618	
Total	2,125	2,433,852	2,435,977	OR = 2.88
19	87	4,304	43,091	
20+	2,022	2,391,596	2,393,618	
Total	2,109	2,434,600	2,436,709	OR = 2.39

K+A= killed + incapacitating; NO= not involved; OR= odds ratio  
Kentucky Accident Reporting System (KARS), Jan. - May, 1995

These statistics are not surprising, nor are they unique to Kentucky. Across the country, injuries sustained from MVCs are the leading cause of death and disability among 16-19 year olds and account for close to 40% of all deaths in this age group (5).

### Economic Costs of Teenage Motor Vehicle Crashes in Kentucky

The costs associated with teenage MVCs are substantially higher than those associated with other MVCs for the following reasons: 1) higher prevalence rates among teenagers result in higher costs; 2) young drivers incur greater productivity losses, and 3) more severe injuries to teenagers are more costly than are injuries to older drivers. For Kentucky's general population, unit costs for a fatal injury total \$642,683 (Table 2; ref. 6,7).

**Table 2. Motor Vehicle Crash-Related Cost Estimate Summary**

UNIT COST (\$)	Injury Expenses	Non-Injury Expenses	Total	% Total
Minor	\$2,901	\$2,823	\$5,724	0.7%
Moderate	22,177	2,899	25,076	3.1%
Serious	73,989	4,872	78,861	9.6%
Critical	556,198	6,707	562,905	68.4%
Total Nonfatals	\$798,883	\$24,282	\$823,165	100.0%
Fatalities	634,866	7,816	642,683	43.6%
Total Injuries	\$1,433,749	\$32,098	\$1,465,848	100.0%

Based on the adult (5.5 per 100,000) and average teenage (11.3 per 100,000) driver death rates (Table 3), the total costs associated with adult driver fatalities were estimated at \$3.5 million. By contrast, the total costs associated with teenage driver fatalities were conservatively estimated at \$7.3 million. If costs were estimated only for 16 year olds (who have a death rate of 23.1), fatal injuries to this age group would cost close to \$15 million.

**Table 3. Frequencies and age-specific rates of motor vehicle crash injuries to drivers by severity (KABCO)**

Age	No Injury		Possible		Nonincapacitating		Incapacitating		Killed		Total	
	frequency*	rate	frequency	rate	frequency	rate	frequency	rate	frequency	rate	frequency	rate
16	1,945	8,980.9	218	1,006.6	176	812.7	66	304.8	5	23.1	2,410	11,128.0
17	2,580	7,372.5	252	720.1	194	554.4	88	251.5	1	2.9	3,115	8,901.3
18	2,629	6,206.5	252	594.9	230	543.0	98	231.4	5	11.8	3,214	7,587.5
19	2,422	5,620.7	249	577.8	189	438.6	82	190.3	5	11.6	2,947	6,839.0
20+	57,419	2,398.8	5,169	215.9	3,596	150.2	1,890	79.0	132	5.5	68,206	2,849.5

Kentucky Accident Reporting System (KARS), January - May, 1995. Data is for drivers only.

Rates derived from numbers of licensed drivers in each age group from KY Transportation Cabinet, Division of Drivers Licensing

Given that teenagers are at a significantly greater risk of severe injury from MVCs than are older drivers, treatment and rehabilitation costs are higher. The estimated cost of a 'minor' injury is \$5,724 per person and \$562,905 per person for a critical injury (Table 2; ref. 6,7). Thus, conservative estimates for the total costs of minor injuries to teenage drivers are \$3.3 million and \$1.2 million for adults. Critical injury costs to teenage drivers were estimated at \$170 million; costs to adults were estimated at \$45 million.

In addition to direct costs associated with injury and non-injury related expenses, indirect costs can be estimated for potential life years lost, and for productivity losses. Based on life expectancy at the time of death, fatally injured teens lost 1,386 potential life years; fatally injured adults lost 187 potential life years. Estimates for productivity losses were based on age, life expectancy, labor force participation rates, annual earnings, value of homemaking services and a 6% discount rate (8). By using fatality rates (see above), productivity losses to teenagers were estimated at \$14 million; losses to older drivers were estimated at \$2 million. Together, these data clearly illustrate the enormous impact that direct and indirect costs of teenage MVCs has on the state economy and its taxpayers.

### Elements and Objectives of Graduated Drivers Licensing

The Kentucky Injury Prevention and Research Center views graduated driver licensing (GDL) as one effective and feasible strategy for reducing the number and subsequent costs of crash-related deaths and injuries to teenagers, their passengers, and other drivers. GDL programs consist of three stages during which an initial set of driving restrictions are progressively eliminated as new drivers acquire knowledge of highway traffic laws and safety, and develop appropriate motor skills. The primary objective is to ensure that young drivers receive practical driving experience under safe operating conditions. Organizations that strongly endorse the GDL concept, such as the American Association of Motor Vehicle Administrators (AAMVA), the National Association of Independent Insurers (NAII), and the National Highway Traffic Safety Administration (NHTSA), have developed model GDL proposals for use by individual state highway safety offices. While none of the states has a comprehensive GDL program, California, Maryland, and North Carolina have major elements of graduated licensure. Preliminary studies have demonstrated small but significant reductions in the number of highway fatalities and injuries (9).

Until recently, little emphasis has been placed on the relationship between the unique characteristics of people at risk for involvement in MVCs and an effective means of protecting them and other individuals from death or injury (10). By design, GDL programs target the driving behaviors and crash characteristics of teenagers. For example, the leading cause of teenage crashes is driver error, presumably due to driving inexperience (11). Thus, a principal aspect of GDL requires novice drivers to practice vehicle operation over an extended period of time. However, traits that put teenagers at greater risk (e.g., immaturity, risk-taking behavior, submission to peer pressure) may make education and training prior to full licensure inadequate for changing driving behavior. Thus, GDL legislation includes strategies for enforcement of rules and procedures, and imposes strict sanctions for violations.

In Kentucky, legislation addressing graduated drivers licensure is being considered. This legislation consists of a three stage process. A novice driver begins with a Learner's Permit, then obtains a provisional license, and finally acquires full driving privileges with an adult license. Drivers with a Learner's Permit must be at least 16 years old and pass written and vision tests. They are not permitted to drive between Midnight and 6:00 AM; they must be accompanied by a licensed driver who is at least 21 years old; and they must have no more than 0.02 blood alcohol concentration (BAC). After a period of at least 90 days, drivers with permits become eligible for provisional licenses. Provisional licensees (16-18 years old) must pass a driving skills test and complete a Graduated Licensing or Driver Education course. They are not permitted to drive between Midnight and 6:00 AM unless accompanied by a licensed driver; they must maintain zero alcohol levels (0.02 BAC); and they have a lower "Point Systems" threshold (6 points). With full licensure (at age 18), the nighttime curfew is eliminated; however, zero alcohol tolerance is maintained until the driver is 21 years old.

The young driver problem is a long established and pervasive problem in the United States, and it is unlikely to change without radical intervention. Graduate drivers licensing is an effective method to save a significant number of lives and reduce the economic impact on Kentucky's health care system.

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**Contributed by: Linda Goldstein, Ph.D., Kentucky Injury Prevention and Research Center, Lexington, Kentucky. For more information you may call Dr. Goldstein at (606) 257-4954.**

#### *Influenza Update . . .*

Twenty-three culture confirmations of influenza have been reported in Kentucky from specimens obtained from November 1995 through February 8, 1996. The specimens were from residents of Bath, Boyd, Butler, Christian, Fayette, Franklin, Jefferson, Knott, Madison, Russell, and Wayne Counties. Twenty-one were type A, and of the 15 that have been sub-typed 13 were Taiwan-like; two were Johannesburg. One was confirmed as type B with subtype pending.

COMMONWEALTH OF KENTUCKY  
CABINET FOR HEALTH SERVICES  
DEPARTMENT FOR HEALTH SERVICES  
275 EAST MAIN STREET  
FRANKFORT, KENTUCKY 40621

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Rice C. Leach, MD, Commissioner  
Department for Health Services

Reginald Finger, MD, MPH, State Epidemiologist,  
Director, Division of Epidemiology

Joyce A. Bothe, Editor, Assistant Director,  
Division of Epidemiology

Nancy Yates, Managing Editor

## MARCH - NATIONAL NUTRITION MONTH

"In a world with tens of thousands of food options, you're not only depriving your taste buds by choosing the same foods week after week, you're also depriving yourself of a healthful eating style, one built on the time-tested principles of balance, variety, and moderation," said Nancy Schwartz, Ph.D., R.D., who direct the American Dietetic Association's (ADA) National Center for Nutrition and Dietetics (NCND).

"By increasing the variety of foods you choose you're more likely to get sufficient quantities of the 40 essential nutrients found in various foods, which over a lifetime will not only increase your vitality, but reduce your risk for many diseases related to nutrition. And perhaps the best news is that, with a little planning, any food can be part of a healthful eating pattern," Schwartz added.

For people who want to improve their health — and tantalize their taste buds, ADA offers the following tips:

- Try one new recipe a week at home. Look primarily for grain, vegetable, and fruit-based dishes.
- Borrow a friend's cookbook and discover exciting new recipes.
- At restaurants, order a dish you've never tried before.
- Experiment with different styles of cuisine. If Mexican or Italian foods are your favorites try sampling Greek or Indian cuisine.

Contributed by the Division of Maternal and Child Health.